AMENDMENTS TO CLAIMS:

The listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A computing system for printing a target image, comprising:

a first memory space for storing said target image;

a second memory space smaller than said first memory space;

a data processing unit for applying a sub-dividing algorithm to said target image to generate an array of rows and columns of sub-image tiles, each of said sub-image tiles being sized to be storable within a predetermined amount of memory capacity not greater than that of said second memory space, said target image being the composite of said sub-image tiles;

a communication link coupling said first memory space to said second memory space for transferring each of said sub-image tiles in turn from said first memory space to said second memory space;

said data processing unit further implementing an image generating routine for generating a printable sub-image block of each sub-image tile within said second memory space, assigning each printable sub-image block a coordinate parameter identifying a target location within a composite memory space, and transferring each printable sub-image block from said second memory space to a printer driver routine prior to transferring the next sub-image tile from said first memory space to said second memory space; wherein

said printer driver routine correlates said composite memory space with the printable space on a printing media and controls the printing of each of said sub-image blocks to locations within said printing media in accordance with their respective coordinate parameter; and

wherein said sub-dividing algorithm includes the following steps:

defining a maximum image area corresponding to said predetermined amount of memory capacity;

if the area of said target image is greater than said maximum image area then executing the following sub-steps:

(a) comparing its height, defined as its vertical side, to its width, defined as its horizontal side;

(b) if its height is greater than its width, then splitting said target image horizontally along its vertical side to create an upper sub-image tile and a lower sub-image tile of substantially equal size;

(c) if its width is greater than its height, then splitting said target image vertically along its horizontal side to create a left sub-image tile and a right sub-image tile of substantially equal size;

(d) if its width and height are of equal size then splitting said target image along one of its vertical and horizontal sides to create two sub-image tiles of substantially equal size;

(e) assigning new coordinates to the newly created sub-image tiles in relation to their relative positions, and linking them together to form a growing array of sub-image tiles;

(f) traversing said growing array of sub-image tiles, one tile at a time, and examining each in turn, the examining of each sub-image tile including the following sub-steps:

(i) checking if the area of the examined sub-image tile is greater than said maximum image area;

(ii) if the area of the examined sub-image tile is not greater than said maximum image area, then checking if a next linked sub-image tile exists in said growing array, if a next linked sub-image tile does not exist then terminating the execution of step (f), otherwise returning to step (i) to examine the next linked sub-image tile in said growing array;

(iii) if the area of the examined sub-image tile is greater than said maximum image area, then comparing its height, defined as its vertical side, to its width, defined as its horizontal side;

(iv) if the height of the examined sub-image tile is greater than its width, then splitting the examined sub-image tile horizontally along its vertical side to create a new upper sub-image tile and a new lower sub-image tile of substantially equal size, assigning the coordinate location of the originally examined sub-image tile to said new upper sub-image tile, assigning new coordinates to said new lower sub-image tile in relation to its position relative to

said new upper sub-image tile, and inserting said new lower sub-image tile in said growing array between the location of the originally examined sub-image tile and the next linked sub-image tile to be examined;

(v) if the width of the examined sub-image tile is greater than its height, then splitting the examined sub-image tile vertically along its horizontal side to create a new left sub-image tile next and a new right sub-image tile, assigning the coordinate location of the originally examined sub-image tile to said new left sub-image tile, assigning new coordinates to said new right sub-image tile in relation to its position relative to said new left sub-image tile, and inserting it in said growing array between the location of the originally examined sub-image tile and the next linked sub-image tile to be examined; and

(vi) returning to step (i) and proceeding to examine the first sub-image tile in said growing array.

2. (Presently Presented) The computing system of claim 1, wherein said image generating routine is further effective for:

printing a rotated representation of said target image by assigning the coordinate parameter of each said sub-image blocks such that the assigned coordinate parameter corresponds to a shifting of each sub-image tile within said array of sub-image tiles by a predetermined offset amount; and

rotating each of said sub-image blocks prior to sending them to said printer driver.

3. (Original) The computing system of claim 2 wherein said shifting of said sub-image tiles within said array of sub-image tiles corresponds to a coordinate shift within said array such that a target sub-image tile at a first corner within said array is shifted to an adjacent corner and all other sub-image tiles within said array are shifted accordingly to maintain a constant positional relation with said target sub-image tile.

4. (Original) The computing system of claim 3 wherein said sub-image tiles are transferred from said first memory space to said second memory space in a sequence order beginning with said target sub-image tile followed by adjacent sub-image tiles, in turn.

5. (Original) The computing system of claim 1, being further effective for:

printing a non-rotated representation of said target image by sending each sub-image tile from said array of sub-image tiles in alignment with each row of said array in succession; and

printing a rotated representation of said target image by sending each sub-image tile from said array of sub-image tiles in alignment with each column of said array in succession.

6. (Canceled)

7. (Original) The computing system of claim 1, wherein the size of said second memory space is insufficient for storing said target image in its entirety.

8. (Currently Amended) A method of printing a target image, comprising:

providing a first memory space for storing said target image;

providing a second memory space smaller than said first memory space;

applying a sub-dividing algorithm to said target image to generate an array of rows and columns of sub-image tiles, said target image being the composite of said sub-image tiles;

sizing each of said sub-image tiles to be storable within a predetermined amount of memory capacity not greater than that of said second memory space;

transferring each of said sub-image tiles in turn from said first memory space to said second memory space;

generating a printable sub-image block of each sub-image tile within said second memory space and assigning each printable sub-image block a coordinate parameter identifying a target location within a composite memory space;

transferring each printable sub-image block from said second memory space to a printer driver prior to transferring the next sub-image tile from said first memory space to said second memory space;

having said printer driver correlate said composite memory space with the printable space on a printing media and controlling the printing of each of said sub-image blocks to locations within said printing media in accordance with their respective coordinate parameter;

wherein said sub-dividing algorithm includes the following steps:

defining a maximum image area corresponding to said predetermined amount of memory capacity;

if the area of said target image is greater than said maximum image area then executing the following sub-steps:

(a) comparing its height, defined as its vertical side, to its width, defined as its horizontal side;

(b) if its height is greater than its width, then splitting said target image horizontally along its vertical side to create an upper sub-image tile and a lower sub-image tile of substantially equal size;

(c) if its width is greater than its height, then splitting said target image vertically along its horizontal side to create a left sub-image tile and a right sub-image tile of substantially equal size;

(d) if its width and height are of equal size then splitting said target image along one of its vertical and horizontal sides to create two sub-image tiles of substantially equal size;

(e) assigning new coordinates to the newly created sub-image tiles in relation to their relative positions, and linking them together to form a growing array of sub-image tiles;

(f) traversing said growing array of sub-image tiles, one tile at a time, and examining each in turn, the examining of each sub-image tile including the following sub-steps:

(i) checking if the area of the examined sub-image tile is greater than said maximum image area;

(ii) if the area of the examined sub-image tile is not greater than said maximum image area, then checking if a next linked sub-image tile exists in said growing array, if a next linked sub-image tile does not exist then terminating the execution of step (f), otherwise returning to step (i) to examine the next linked sub-image tile in said growing array;

(iii) if the area of the examined sub-image tile is greater than said maximum image area, then comparing its height, defined as its vertical side, to its width, defined as its horizontal side;

(iv) if the height of the examined sub-image tile is greater than its width, then splitting the examined sub-image tile horizontally along its vertical

side to create a new upper sub-image tile and a new lower sub-image tile of substantially equal size, assigning the coordinate location of the originally examined sub-image tile to said new upper sub-image tile, assigning new coordinates to said new lower sub-image tile in relation to its position relative to said new upper sub-image tile, and inserting said new lower sub-image tile in said growing array between the location of the originally examined sub-image tile and the next linked sub-image tile to be examined;

(v) if the width of the examined sub-image tile is greater than its height, then splitting the examined sub-image tile vertically along its horizontal side to create a new left sub-image tile next and a new right sub-image tile, assigning the coordinate location of the originally examined sub-image tile to said new left sub-image tile, assigning new coordinates to said new right sub-image tile in relation to its position relative to said new left sub-image tile, and inserting it in said growing array between the location of the originally examined sub-image tile and the next linked sub-image tile to be examined; and

(vi) returning to step (i) and proceeding to examine the first sub-image tile in said growing array.

9. (Previously Presented) The method of claim 8, further including:

printing a rotated representation of said target image by assigning the coordinate parameter of each said sub-image blocks such that the assigned coordinate parameter corresponds to a shifting of each sub-image tile within said array of sub-image tiles by a predetermined offset amount; and

rotating each of said sub-image blocks prior to sending them to said printer driver.

10. (Original) The method of claim 9 wherein said shifting of said sub-image tiles within said array of sub-image tiles corresponds to a coordinate shift within said array such that a target sub-image tile at a first corner within said array is shifted to an adjacent corner and all other sub-image tiles within said array are shifted accordingly to maintain a constant positional relation with said target sub-image tile.

11. (Original) The method of claim 10 wherein said sub-image tiles are transferred from said first memory space to said second memory space in a

sequence order beginning with said target sub-image tile followed by adjacent sub-image tiles in turn.

12. (Original) The method of claim 8, being further including:

printing a non-rotated representation of said target image by sending each sub-image tile from said array of sub-image tiles in alignment with each row of said array in succession; and

printing a rotated representation of said target image by sending each sub-image tile from said array of sub-image tiles in alignment with each column of said array in succession.

13. (Canceled)

14. (Original) The method of claim 8, wherein the size of said second memory space is insufficient for storing said target image in its entirety.

15. (Currently Amended) A machine readable medium embodying instructions for printing a target image, said instructions comprising the steps of:

applying a sub-dividing algorithm to said target image for generating an array of rows and columns of sub-image tiles, each of said sub-image tiles being storable within a predetermined amount of memory capacity, said target image being the composite of said sub-image tiles;

generating a printable sub-image block of each sub-image tile in turn and assigning each printable sub-image block a coordinate parameter identifying a target location within a composite memory space;

transferring each printable sub-image block to a printer driver;

having said printer driver correlate said composite memory space with the printable space on a printing media and controlling the printing of each of said sub-image blocks to locations within said printing media in accordance with their respective coordinate parameter;

wherein said sub-dividing algorithm includes the following steps:

defining a maximum image area corresponding to said predetermined amount of memory capacity;

if the area of said target image is greater than said maximum image area then executing the following sub-steps:

(a) comparing its height, defined as its vertical side, to its width, defined as its horizontal side;

(b) if its height is greater than its width, then splitting said target image horizontally along its vertical side to create an upper sub-image tile and a lower sub-image tile of substantially equal size;

(c) if its width is greater than its height, then splitting said target image vertically along its horizontal side to create a left sub-image tile and a right sub-image tile of substantially equal size;

(d) if its width and height are of equal size then splitting said target image along one of its vertical and horizontal sides to create two sub-image tiles of substantially equal size;

(e) assigning new coordinates to the newly created sub-image tiles in relation to their relative positions, and linking them together to form a growing array of sub-image tiles;

(f) traversing said growing array of sub-image tiles, one tile at a time, and examining each in turn, the examining of each sub-image tile including the following sub-steps:

(i) checking if the area of the examined sub-image tile is greater than said maximum image area;

(ii) if the area of the examined sub-image tile is not greater than said maximum image area, then checking if a next linked sub-image tile exists in said growing array, if a next linked sub-image tile does not exist then terminating the execution of step (f), otherwise returning to step (i) to examine the next linked sub-image tile in said growing array;

(iii) if the area of the examined sub-image tile is greater than said maximum image area, then comparing its height, defined as its vertical side, to its width, defined as its horizontal side;

(iv) if the height of the examined sub-image tile is greater than its width, then splitting the examined sub-image tile horizontally along its vertical side to create a new upper sub-image tile and a new lower sub-image tile of substantially equal size, assigning the coordinate location of the originally examined sub-image tile to said new upper sub-image tile, assigning new coordinates to said new lower sub-image tile in relation to its position relative to

said new upper sub-image tile, and inserting said new lower sub-image tile in said growing array between the location of the originally examined sub-image tile and the next linked sub-image tile to be examined;

(v) if the width of the examined sub-image tile is greater than its height, then splitting the examined sub-image tile vertically along its horizontal side to create a new left sub-image tile next and a new right sub-image tile, assigning the coordinate location of the originally examined sub-image tile to said new left sub-image tile, assigning new coordinates to said new right sub-image tile in relation to its position relative to said new left sub-image tile, and inserting it in said growing array between the location of the originally examined sub-image tile and the next linked sub-image tile to be examined; and

(vi) returning to step (i) and proceeding to examine the first sub-image tile in said growing array.

16. (Previously Presented) The machine readable medium of claim 15, further including the steps of:

printing a rotated representation of said target image by assigning the coordinate parameter of each said sub-image blocks such that the assigned coordinate parameter corresponds to a shifting of each sub-image tile within said array of sub-image tiles by a predetermined offset amount; and

rotating each of said sub-image blocks prior to sending them to said printer driver.

17. (Original) The machine readable medium of claim 16, wherein said shifting of said sub-image tiles within said array of sub-image tiles corresponds to a coordinate shift within said array such that a target sub-image tile at a first corner within said array is shifted to an adjacent corner and all other sub-image tiles within said array are shifted accordingly to maintain a constant positional relation with said target sub-image tile.

18. (Original) The machine readable medium of claim 17, wherein said sub-image tiles are converted to sub-image blocks in a sequence order beginning with said target sub-image tile followed by adjacent sub-image tiles in turn.

19. (Original) The machine readable medium of claim 15, being further including:

printing a non-rotated representation of said target image by sending each sub-image tile from said array of sub-image tiles in alignment with each row of said array in succession; and

printing a rotated representation of said target image by sending each sub-image tile from said array of sub-image tiles in alignment with each column of said array in succession.

20. (Canceled)

21. (Previously Presented) The computing system of claim 1, wherein said target image in said first memory space encompasses an entire page of said printing media.

22. (Previously Presented) The method of claim 8, wherein said target image in said first memory space is made to encompass an entire page of said printing media.

23. (Previously Presented) The machine readable medium of claim 15, wherein said a target image encompasses an entire page of said printing media.